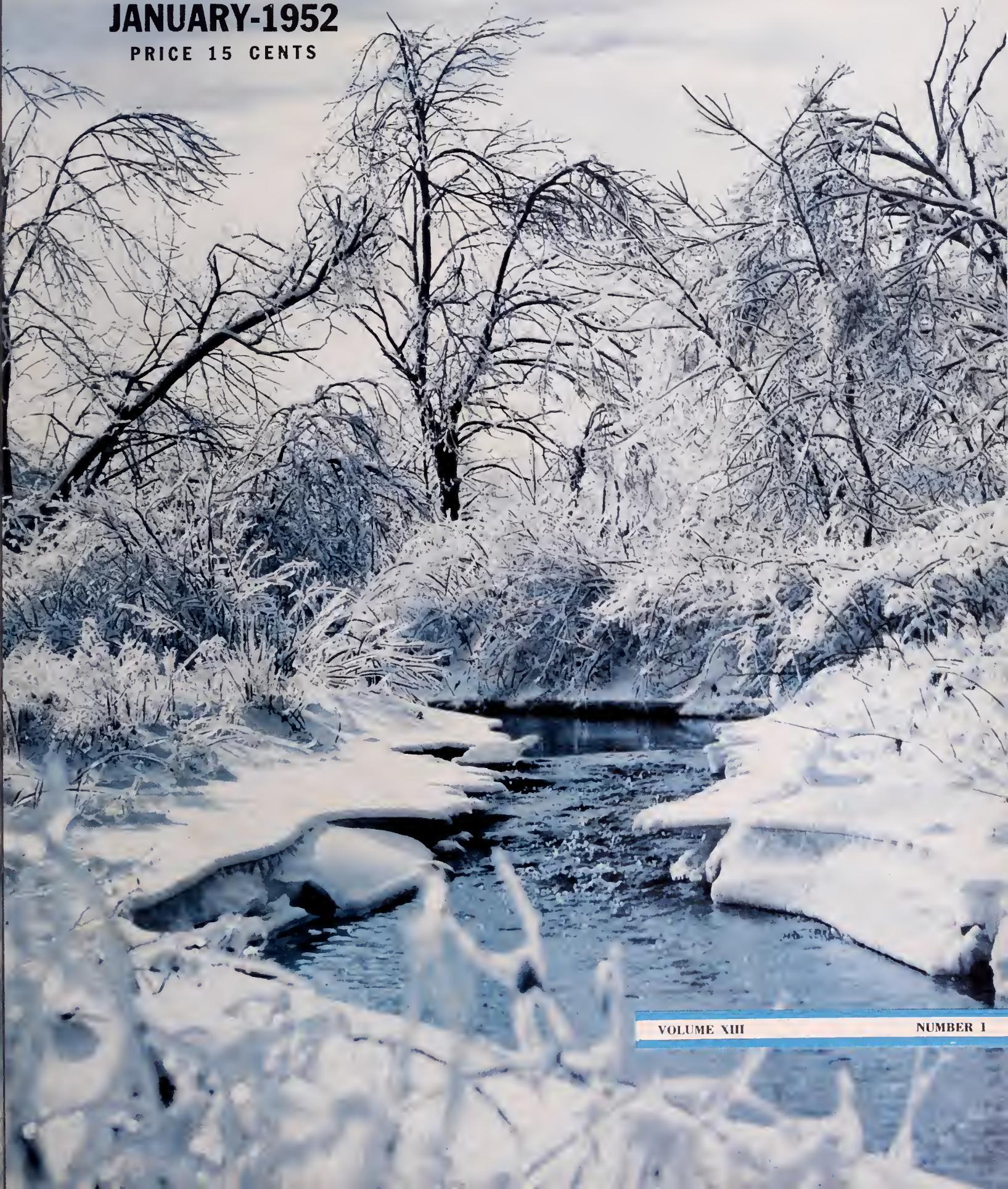


VIRGINIA WILDLIFE

JANUARY-1952

PRICE 15 CENTS



VOLUME XIII

NUMBER 1



Photo by Maslowski and Goodpaster, National Audubon Society.

JANUARY ADVENTURE

A sheepish young opossum ventures out into the January snow—finds it too cold, poses just long enough for the cameraman, and deliberates about returning to its burrow.

VIRGINIA WILDLIFE

Published by VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES, Richmond 13, Virginia

A Monthly Magazine for Higher Standards of Outdoor Recreation Through Wildlife Conservation

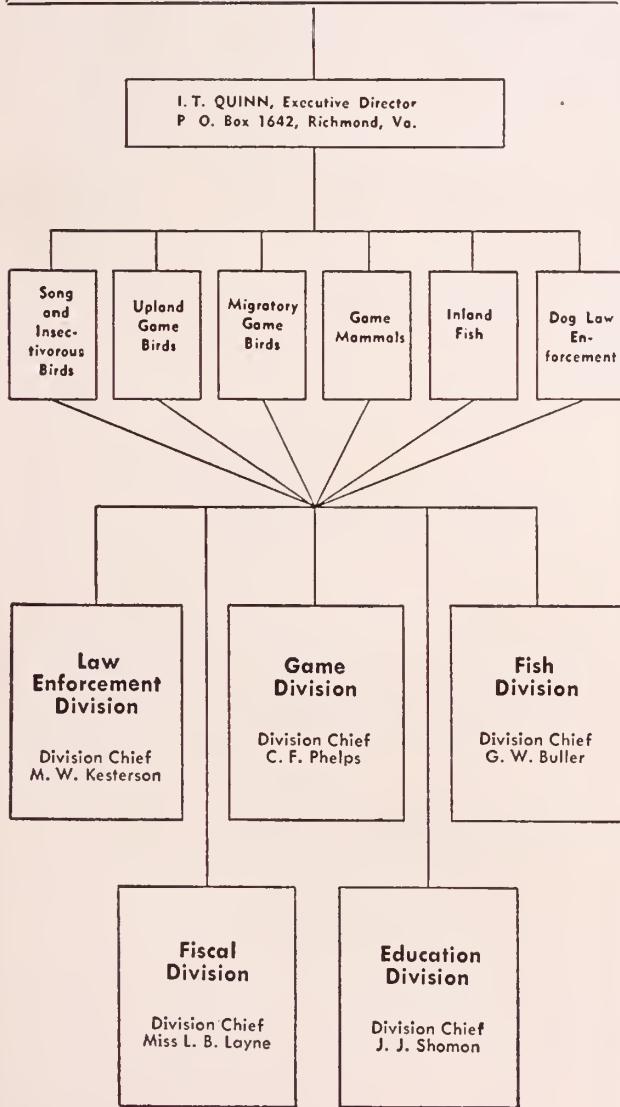
COMMONWEALTH OF VIRGINIA



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VOLUME XIII JANUARY, 1952 NUMBER 1

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Cover Photo

Winter Wonderland! This scene brings to mind Ruskin's famous lines: "Come, ye cold winds, at January's call, On whistling wings, and with white flakes bestrew the earth."

Photo by Harold Lambert Studios

VIRGINIA WILDLIFE gratefully receives for consideration all news items, articles, photographs, sketches and other materials which deal with the use, management and study of Virginia's interrelated, renewable natural resources:

WILDLIFE

SOILS — CONSERVE — WATER

FORESTS

Since wildlife is a beneficiary of the work done by State and Federal land-use agencies in Virginia, editorial policy provides for recognition of their accomplishments and solicitation of their contributions. Credit is given on material published. Permission to reprint is granted provided proper credit is given.

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SOME NEW YEAR RESOLUTIONS

EACH YEAR, as we turn in the old calendar and start on the new, we are beset with making resolutions. It is an old American custom—and a good one, even though sometimes the “resolves” we take are not followed in the strictest sense of the word.

Several years ago we ran a set of ten resolutions for our readers and conservationists. We think they are worth repeating—worth resolving again. Why not read them over and adopt them once more for 1952.

I resolve:

1. To cooperate with every conservation agency to the end that upland game and waterfowl harvesting might be prolonged.
2. To sacrifice a portion of my “so-called privileges” that the youth of today and the morrow may also enjoy the outdoor recreation I have enjoyed.
3. To commend, rather than criticize the national and state conservation officials when they exhibit a sufficient amount of intestinal fortitude to restrict the harvesting of game, in an effort to perpetuate this form of recreation.
4. To lay aside my personal prejudices and animosities and strive to bring about a more complete cooperative spirit between state and federal agencies and voluntary conservation organizations so that both private and public agencies might be better able to arrive at a more intelligent understanding of the wildlife problems.
5. To make my criticisms constructive by eliminating the slightest vestige of selfishness.
6. To consider my opportunity to go afield a privilege rather than an inherited right.
7. To seriously consider the ever-changing physical conditions and accumulating wildlife hazards which are reducing our supply of wild creatures.
8. To restore the right of others; to tolerate no vandalism and become more accident conscious.
9. To remember wildlife is the property of all our citizens held in trust by the state and authorized federal agencies to be properly administered for the benefit of all the people.
10. To so conduct myself as to be a credit to the other millions of outdoor sportsmen and an example of good sportsmanship, serving to inspire the youth of our nation.

The Importance of Enforcement in Wildlife Conservation

By G. A. JONES, JR.

IT IS GENERALLY recognized that the aim of any wildlife conservation effort is to control the harvest in order to gain for man the maximum benefit from this natural resource. Conservationists are familiar with the five basic functions of a sound program, and the activities concerning the regulation, management, education and research phases of wildlife work. The fifth program function deals with both the wildlife resource and human populations which affect our efforts to manage it. Enforcement, through the variety of its activity, has the greatest direct bearing upon the success of the conservation effort of all the five functions in a program.

Enforcement's Place in Preventing Violations

Enforcement officers exist solely because of the service they render in preventing violations of the laws. Just as a gun is no better than the soldier who carries it, a law or regulation is no better than the ability of the executive body to carry it out. Success of regulation and management is impossible without public conformity, and enforcement by arrest and prosecution activity has the greatest single effect in securing this conformity. Although court action is not the most desirable method to secure cooperation, it is necessary for deterrent effect. Where fear of prosecution prevents violations by a willful non-conformist, the program is successful as far as that person is concerned.

The quality of service rendered by the enforcement officer inspires public reaction to the program. Effective enforcement personnel, indoctrinated with the need for gaining public support for conservation, can gain the confidence of the people with

whom they associate by skillful apprehension and trial methods, while poorly executed duties of an inefficient officer will engender public disgust, or contempt. Service by enforcement is a vital part of any conservation effort, and the effectiveness in preventing violations will measure the quality of this service.

Enforcement's Place in Gaining Public Support

While to the uninitiated the aim of an enforcement program might be expressed as "the arrest and prosecution of all wildlife law violators," the thinking conservationist emphasizes that the real object is to *secure public observance* of the laws. The program's success is assured when it has gained the observance of its rules by the persons upon whom it operates. This attitude is not automatic upon passage and publication unless there is a promise of immediate personal advantage. General observance of law, especially of conservation law, is created through a public acceptance of the wisdom in, and the need for, that law, and

through enforcement which is impartial, just, and guided by *common sense applied to the principle for which the law was enacted*. At this relatively early stage in the total conservation movement, many feel that conservation laws deprive them of rights and privileges which they enjoyed uninhibited before those laws were passed. Enforcement's greatest service lies in aiding to overcome this attitude, engendering in its place acceptance and observance of the conservation laws.

Law is only common sense in writing. So long as law remains within the bounds of common sense it retains support. But, when law exceeds the limit of its need—when it by-passes common sense, or when it becomes so complicated that persons can-



Commission photo by Kesteloo

Enforcement officers exist because of the service they render in preventing violations.

not see where society is benefitted then it is ignored. Many laws have been killed because of the lack of need for them, or because they were too full of complications to be effective. Many good laws remain to be written because their need is not apparent. Conservationists, especially, have had a long fight in obtaining sound legislation because there has been no general recognition for its necessity. But, once the need for a law is apparent to the public, the need for its enforcement is obvious. When public pressure demands enactment, it also requires observance. Enforcement based on sound principles of impartiality, fairness and common sense will instill public support for the conservation program, and by guiding that support toward need for sound conservation practices, the enforcement officer can induce public demand for good conservation laws.

Enforcement's Place in Gaining Active Public Participation

Fear of prosecution is an undesirable attitude toward conservation, as is indifferent observance of the program's operation. A vigorous participation by the public insures the program's continued success, and the enforcement agency is the key to that participation. While arrests are necessary as antidotes, and fear of court action is a deterrent, the wise enforcement officer seeks popularity for his cause, and public participation in his program. He becomes a teacher and salesman who plants the desire to achieve conservation in his contemporaries by affirmative service rather than by court action alone. This service he renders by teaching sportsmen who respect him, by work with youth groups, and by his own dedication to conservation principles in the duties of his office. He seeks development of a community attitude which encourages active assistance in the program, rather than a fear of apprehension or passive observance of the laws.

Perhaps the greatest asset of the enforcement staff to educational work is its full coverage of every part of the state, and its constant contact with unlimited numbers of people. Every person can be told something of conservation, and the continual efforts of enforcement officers to educate the uninformed through information material, visual aids, public appearances, and person-to-person contacts account for a large part in gaining active participation.

The work of wildlife officers is a child's idea of adventure. Woodsmanship, knowledge of nature's kingdom, and close association with fish, birds, and other wild animal life attract the interest of youngsters, and childhood respect for any "officer-of-the-law." By virtue of this popularity with children

the officer is valuable as a teacher who is able to aid conservation education where it has the most lasting effect—in the minds of young people. By virtue of his acquaintances in his section of the state, he is able to develop active support in the minds of adult citizens.

The availability of the enforcement staff is valuable to technical game and fish management, where knowledge of local conditions is important. Reporting on ecological conditions, rendering aid in manipulation of those conditions, and advocating farm practices to improve them, and many other management activities form a vital part of the enforcement officer's work as a matter of routine.

In states in which the program is financed solely by license revenue, the quality of enforcement is an economic factor. Obviously, vigorous enforcement brings an increased revenue, while poor enforcement permits a reduced return. Few will risk payment of a fine, rather than the license fee required, when apprehension is a probability. Where the distribution of licenses to sales agents, and collection of funds from their sale, is handled by enforcement personnel, this again is a utilization of location, and a means whereby wider public participation is achieved.

Enforcement's Relation to Conflicting Interests of State and Federal Agencies

A tendency has developed in recent governmental processes which needs the attention of all concerned with conservation administration. Any laxness in a state's protection program becomes dangerous when it attracts the attention of some other govern-

The enforcement officer, by his exemplary conduct, can induce public demand for good conservation laws.

Commission photo by Kesteloo





Commission photo by Shomon

Law enforcement is a public service. The quality of service establishes the public reaction to the agency.

mental agency or official to the possibility of gaining control over the activity. The ownership and right of control over wildlife has been vested in the people of the states under common law usage of the principle established by the Magna Carta in 1215. The tenth amendment to the Constitution of the United States specifically reserves to the states all powers and rights not granted to the Federal Government by this document. The courts and the general public have been cognizant of this right of control being in the citizens of the states, as shown by Supreme Court rulings and legislative acts, since the founding of this country. The U. S. Fish and Wildlife Service, as the federal agency involved most closely with wildlife management, has wisely followed this legal precept in the operation of federal aid machinery, in that this agency acts as the accounting and disbursing office, leaving the initiation and completion of the various projects under the control of the states.

The International Association of Game, Fish and Conservation Commissioners firmly believes that the management of non-migratory species of wildlife is a duty of state government, and has expressed vigorous opposition to attempts by some federal agencies to gain control over this classification of wildlife. A resolution of that body, passed at the annual meeting held in Rochester, in September, states this position emphatically.

But the activities of some federal agencies indicate the beginning of an absorption of state's duties permitted by a complacent public sentiment that the Federal Government is better able to manage and protect wildlife than any mere state organization. In North Carolina, considerable tension has been created through evidence of this desire of some federal land-owning agencies to exercise exclusive

control over the wildlife on that land. It is true that the state legislature did cede away jurisdiction of the state on many matters within the confines of the Smoky Mountain National Park and some other lands within the state, but federal officials on several national forests and military reservations have increasingly demonstrated the tendency to appropriate control over wildlife affairs to themselves, even to the extent that they ignore the laws of the state, and the regulations which lawfully govern hunting and fishing. An efficient law enforcement program, which has secured the support and enthusiasm of the public for the state agency's program, is one of the best defenses against the continuation of this usurpation of state powers. A public is aroused in support of its own state agency, and which is solidly maintaining interest in the agency's program, can override the desire of any bureau or individual to obtain more power at the expense of the state. A competent enforcement body will shape this public support to the retention of the right in the states to manage and control their own wildlife affairs. Efficiency is, and will always be, the best politics to be followed by a state wildlife administration, and is an indisputable argument in opposition to the relinquishment of control of the state's wildlife to federal agencies.

Measures to Increase Enforcement Efficiency

Law enforcement is a public service, and since it covers so many different phases in conservation work, the quality of service establishes the public reaction to the agency. Gaining support for conservation by countering the "exploit today, let tomorrow care for itself" theory is the mission of the agency, and the gravest responsibility in carrying out that mission lies in the enforcement officer's hands. To gain the fullest benefit from the enforcement effort, all available aids should be given the men who carry out that function. Three steps are vital, and the more positive the steps, the more permanent will be the results.

First step: the enforcement body must be provided with features which attract, and hold, men whose qualities make them valuable to conservation. Salaries of wildlife enforcement men are traditionally low—they must be raised to levels of other enforcement officers with commensurate authority. Qualified men will be attracted by a good salary, and young men will make affirmative preparation for wildlife work as a career if they can be shown that a comfortable living is to be gained from it.

Personnel practices must be followed which will
(Continued on page 12)

SAVE that HEAD!

By LESLIE R. HARPER

If you want a nice job done on your prize trophy head, then give the taxidermist a chance.

WITH THE ADVENT of another deer season the epidemic of buck fever runs wild, therefore, a word of warning to the trophy hunter is in order. The difference between a ghostly, ill-shaped head and a truly graceful life-like mount depends to a large extent upon the hunter.

Practically every sportsman who goes deer hunting dreams of the day when he will bring down his own "trophy"—the kind that was meant for that special spot over the fireplace or on the wall of the den.

So, before you go out and bring down that prize buck, there are a few preliminary pointers on the elements of taxidermy with which you should be familiar.

An excellent place to start planning for that prospective trophy is right in your own home. Pick a definite place for hanging and study the arrangement in the room carefully, as well as the height of the ceiling. To be attractive, it is well to keep in mind that the trophy should be placed opposite the main entrance in the room. The majority of hunters have their deer heads mounted in an upright, straight pose. In many cases this is a misfit with loss of a really natural pose and its decorative value. If the ceiling is low, a sneak mount in a turned position will usually blend beautifully—but make definite plans before going hunting—you may bag him on your next trip.

If you are lucky enough to finally catch up with the trophy you want, don't shoot him in the head. That may seem elementary, but unless you think of it first, it may be too late after you pull the trigger. A badly shot up head may be impossible to mount with any degree of success.

Remember, after you've dropped your buck don't

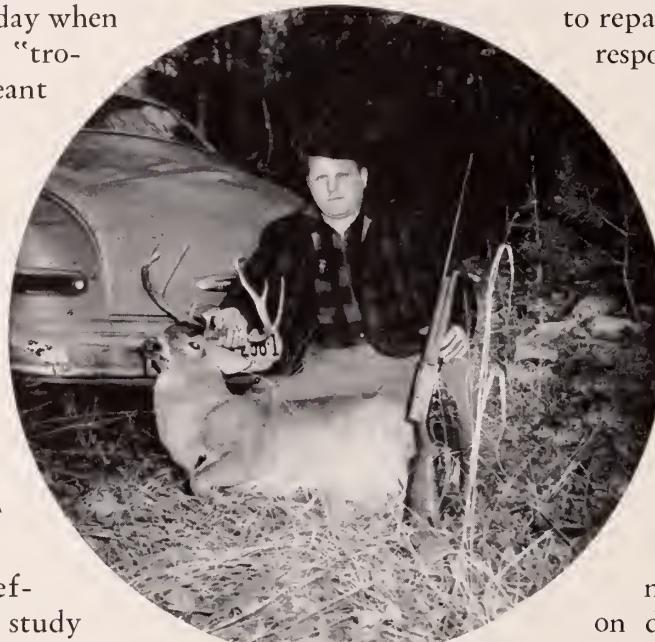
rush up and cut his throat. In the first place, if you dress the animal out right away it isn't necessary; in the second place, you will absolutely ruin it as far as mounting it is concerned. All cuts about the neck or throat should be avoided for they detract from the appearance of the specimen, meaning extra time on the part of the taxidermist to repair the cuts, resulting in a corresponding increase in the cost.

There are several steps you should become familiar with before you take to the field. Make mental note of the proper way to make the incision, to skin the specimen, and to take the proper measurements. The incision is very important and, unless properly made, the trophy may look like a sewed up baseball. On most game heads, cuts should be made up the back of the neck to the base of skull, while

on deer and other animals with antlers it becomes necessary to make a "Y" incision. Use a strong screwdriver to pry the skin loose around the antlers, and then finish skinning the head. Care should be exercised to avoid cutting

holes around the eyes, lips, and nose. If the hide is to be tanned, it is advisable to leave scalp attached, letting the taxidermist remove it; but if this is not the case, then your own judgment must be employed. Just to stay on the safe side add a few more inches back toward the shoulders than you originally planned. Every season some beautiful specimens are ruined by just such mistakes. Salt the scalp well and roll up over night. Next morning scrape off all of the salt with a dull knife and wash blood spots from the hair. Salt it again after the above operation, and get it on the road to your taxidermist.

(Continued on page 12)



Commission photo by R. L. Crawford

Your "trophy" buck head is worth mounting.



U. S. FWS photo by Hammond

Early bird conservation began with the protection of the game bird species.

The Struggle for Bird Conservation

By J. J. SHOMON

WHEN Captain John Smith and his bold English colonists stepped ashore at Jamestown in 1607, the territory now known as Virginia was almost entirely in forests. Indians roamed the woods and paddled the river courses everywhere, but their total number was small. Perhaps 50,000 Indians all told—including the larger tribes*—were all that inhabited early Virginia. With unlimited food and cover, unbroken forests which afforded every possible kind of escape cover and few natural enemies, birds and every other form of wildlife flourished. Streams, rivers, and tidal estuaries ran clear—unsilted and unpolluted by draining surface run-off from countless farms or the harmful waste from industrial plants, and in and around their pellucid depths thrived myriads of game fishes and water-loving birds of many species.

From the Tidewater country in the east to the little known Blue Ridge and the Alleghenies in the west, wildlife roamed and soared and thrived in uninhibited glory. The wild turkey was so abundant that it was nothing for a lone Indian hunter, with his bow and arrow, to bag a dozen in a single morning's hunt.

*Pow-ha-tans, Pa-mun-keys, Mat-ta-po-ny's, Chick-a-hom-i-neys, Mon-a-cans, Shaw-a-nese, Cher-o-kees, and others.

With the coming of the white man conditions changed. Wildlife which heretofore had known destruction only at the hands of the Indian—and this largely for food—now had to reckon with new, more destructive ways. Tools of defense as well as exploitation began a new era. The pioneer's rifle, the axe, the plow, and fire all took their places alongside the white man in his relentless exploration and settlement of an empire.

Almost a century and a half after Jamestown, the colony of Virginia and the land beyond was still virtually "a land of plenty." Robert L. Kincaid, in his revealing book *The Wilderness Road* tells of Dr. Thomas Walker's explorations into the western reaches of Virginia to locate 800,000 acres of land for settlement. Walker's party of six horsemen spent around five months traveling over what is now southwestern Virginia and eastern Kentucky, during which time they killed thirteen buffaloes, eight elk, fifty-three bears, twenty deer, four geese, one hundred fifty wild turkeys, and much small game. After his trip Walker said that "we might have killed three times as much meat if we had wanted it."



Quail first received protection in Virginia in 1879.

While our forefathers took wildlife for granted and looked upon fish and game as a matter of course, a few champions of conservation began lifting their voices in protest, even in Colonial times. While earlier bird protection dealt mostly with game birds, it is significant that this led to eventual protection of nearly all species. The first state to enact a law for game was New York, in 1791. The Commonwealth of Massachusetts in 1818 forbade "the wanton destruction of useful and profitable species."

The passage of state game laws followed closely on the heels of the retreating frontier, reaching California and the Pacific in 1852. The first state requiring the purchase of a license to hunt game was New York in 1864; this was followed by a non-resident license by New Jersey in the same year. The first rest day for wildlife was set by Maryland in 1872. Market hunting was outlawed by Arkansas in 1875. Three years later (1878) Iowa set the first bag limit on birds—twenty-five prairie chickens a day. By 1880 nearly all of the states had game laws of one form or another.

It was not until the middle eighties that the public began awakening to the need of protecting that group of birds known as the "non-game birds." It was during this period that the Audubon Society was formed, and which by a long program of education to acquaint the public with non-game birds helped in the passage of the Audubon law in all but six state legislatures. In 1885 the Bureau of Biological Survey was organized in the U. S. Department of Agriculture, resulting from the virtual extirpation of the buffalo and the passenger pigeon.

In 1891 Wisconsin took steps to give ducks a measure of protection. The whole idea of duck refuges had its origin here. However, California should be credited with establishing the first state refuge in the early 1870's. In 1894 Yellowstone

National Park was closed to public hunting. Later, in 1904, Jack Miner started his famous waterfowl refuge in Ontario, near Kingsville.

It was during the Theodore Roosevelt era (beginning in 1901) that the idea of conservation through wise use of natural resources came into prominence. Until then, conservation was but a term. No one had ever heard of it. Almost instantly it became the label of a national issue.

Just prior to the presidency of "Teddy" Roosevelt the Congress passed the Lacy Act (May 25, 1900) which made it unlawful for any person or firm to deal or receive for shipment or transport any wild bird or animal or the dead body thereof, or the egg of any such bird, imported from any foreign country, contrary to any law of the United States, or captured, killed, taken, purchased, sold, or possessed contrary to any such law. This was an excellent law and finally gave the Federal Government supervision over interstate game and prohibited interstate commerce in illegal game.

In 1903, President Theodore Roosevelt, yielding to the urgings of the Audubon Association officials, began setting aside by executive order areas of government-owned land known as "Federal Bird Reservations," with the understanding that for a time at least the associations should bear some of the expense of guarding them. Other presidents have since followed his example and reservations now number several hundred, located in almost every state in the union.

According to Frederick C. Lincoln, assistant to the director, U. S. Fish and Wildlife Service, the first attempt to give federal protection to migratory birds was a bill introduced by Congressman George Shiras III, on December 5, 1904, under the title "A Bill to Protect the Migratory Birds of the United States." This was really intended to be a national game law, since it was restricted to the migratory game species. It failed of passage and it was not until nine years had elapsed that the Congress and the people generally were brought to a realization of the need for national legislation.

The Weeks-McLean bill, which in its essential features was a reiteration of the Shiras bill of 1904, was attached as a rider to the Agricultural Appropriations Act for the fiscal year 1914, and became law upon its approval on March 4, 1913 (37 Stat. L., 828, 847, 848). This action of Congress was bitterly resented by some, and an attempt to repeal it was made the following year. This was unsuccessful and instead Congress made the first appropriation for its enforcement.

There was good reason for believing that the new law was not invulnerable to attack on Constitutional grounds, and two United States Courts held to this view. An appeal was taken by the Government to the Supreme Court, but the question was converted into a dead issue by the conclusion of the Migratory Bird Treaty in 1916. This was ratified by the Senate on August 29, 1916, and was formally approved by the President on September 1. Great Britain ratified it on October 20; the ratifications were exchanged on December 7, and by Presidential Proclamation it was promulgated the following day.

The Migratory Bird Treaty Act, putting the treaty into effect, was signed on July 3, 1918. The question of its constitutionality was settled in the affirmative by the Supreme Court on April 19, 1920. The Canadian Parliament had previously given effect to the treaty by passage of the Migratory Birds Convention Act, approved on August 29, 1917.

The Convention with Mexico was ratified by the United States on April 30, 1936; and by Mexico on December 10, 1936; the ratifications were exchanged on March 15, 1937, when it was proclaimed by President Franklin D. Roosevelt.

Wildlife in the United States is the property of the various states. When the early English colonists set out for the New World one of the demands they brought with them was the right to bear arms, and the equal right of every citizen to hunt, trap, and fish. In Europe, game was always considered the property of the rich, the landowners, and this idea continued down to the present day.

In contrast, we in America look upon wildlife as common property. Since wildlife is considered public property, it becomes a public trust, and as



Photo by U. S. Fish and Wildlife Service

Birds in Virginia, like this mourning dove with its young, are protected by both state and federal laws.

such a public responsibility. It is the duty, therefore, of the various states to see that all wildlife not classed as migratory be given suitable protection. The protection has now been provided by all of the forty-eight states, although the extent of the protection differs with the states.

Birds in Virginia are protected by either state or federal laws, or both. The hunting of migratory game birds, for instance, is regulated by the federal government's Fish and Wildlife Service. These migratory game birds are ducks, geese, coots, doves, rails and gallinules, and woodcock. The enforcement of the game laws pertaining to these species, however, also becomes a state responsibility, and each year Virginia honors the regulations adopted by the federal government, and helps with their enforcement. Likewise, Virginia gives protection along with the federal government to the songbirds, or non-game species.

Half Water—Half Fish

What about this old complaint—not enough fish? Perhaps we need to look a bit closer. Maybe there are too many fish! Mr. Buller of the Fish Division often gets complaints like this, "All I have in my pond are little fish and no big ones!" When a pond is filled with fish that are too small to be worth catching it is usually an indication that there are too many fish. Why? We can ask ourselves this question "What happens when there are too many cattle for a pasture?" There is only one answer, the cattle don't get enough to eat and become stunted; the same principle applies to fish production. When there are too many fish the fish get stunted.

When a steer or a fish gets enough to eat it will grow. Don't you know of a pond that is famous for its "bream" fishing? The bream are large because there are not too many brothers and sisters competing for the same food. It is quite likely that most of the kinfolk have been gobbled up by a bass, a pike or another predacious fish. There is always one rule that applies to fish production, "A fish grows largest where he has the least competition for food". This one principle is the answer to the angler's question "Why can't I have a pond that is half water and half fish?"

SAVE THAT HEAD

(Continued from page 8)

Perhaps you have often wondered why it takes so long to get your trophy back from the taxidermist. Let's take a look behind the scene. When the head arrives at the taxidermy shop, it becomes necessary to produce a mount as near life-like as art will permit. The taxidermist must study and analyze the possible poses for your trophy, comparing them with any pictures that he may have.

One internationally known taxidermist followed horse racing for a year, studying the animals before mounting *Pbar Lab*, a world renowned Australian race horse.

Such is the meticulous care with which some taxidermists will make miniature models of their specimens before attempting the real thing. Such models allow him to become thoroughly familiar with the animal's anatomy and expression, and permit the making of a life-size model. From this model a plaster mold is made and a reproduction of the original model is produced of paper-mache, over which the scalp is placed.

Your trophy is now ready to take its rightful place among your prized possessions. You have taken care and patience in its preparation. As you place it over the mantle to be seen by all that enter—you are proud, and justly so; for it is a masterpiece radiating its perfection on all who look upon it.



"Gosh, I'm sorry, Mac—I thought it was lever action!"

THE IMPORTANCE OF ENFORCEMENT IN WILDLIFE CONSERVATION

(Continued from page 7)

be attractive to men of the caliber sought. A selection method, which adheres more strongly to political endorsement than to the public relations potential of the candidate, is to be deplored. One which pays more attention to whom the candidate knows than to his ability to impartially enforce the law will disgust the employees who seek improvement of their agency, and it will also discourage good candidates from making application. Any loosely-knit body which is left to run itself, instead of a cohesive and intelligently supervised staff, will attract only slackers and incompetents. A well qualified prospective employee will be looking for a position which leads in a predetermined direction,

rather than one which is merely following the path of least resistance.

Second step: the officer himself must be given those qualities which today's enforcement measures demand. Specific instruction in the laws, techniques of enforcement, management, research, public relations, and the methods of making conservation attractive is necessary for efficiency. Supervision and training must encourage the officer to apply his basic qualities toward achievement of the conservation objective. The salary scale should be flexible to reward varying degrees of achievement.

While court action is not regarded as the best method of creating law observance, it is a necessary measure when dealing with a large group of so-called sportsmen. Detection of violations, apprehension of the responsible persons, and collection and presentation of evidence have become more difficult with

enlarged hunting and fishing activity and modern legal processes. It is only in knowledge of where and how to apprehend violators that experience is the best teacher. The officer's enlarged service in enforcement demands skills which can be imparted only by formal training, and the agency must provide this training to promote his fullest effectiveness. Knowledge of when, how, and what to do in connection with a case, knowledge of why and how the management program is conducted, knowledge of natural resources, and the best methods

for conservation of those which are renewable—these technical skills can be gained only through organized instruction. The fullest measure of the officer's effectiveness can be gained only if the agency provides this training.

Third step: the officer must be placed in a position to gain for himself the respect and confidence of his associates in the work he is doing. Subterfuge and underhand procedures invariably come to public attention. The officer who uses them can never keep the respect of others. His work, and the direction of his effort, must be of such quality that a public disclosure of every motive would meet the requirements demanded of an honest, straight forward citizen and community leader.

Some Measures in Use in North Carolina to Increase Effectiveness of Enforcement

The largest problem in establishing North Carolina's personnel management plan lay in breaking

the ties of political factions. Vacancies subjected the officials to a flood of endorsements, recommendations, and other efforts to have a favorite appointed. Tests for competence given in the county where the vacancy occurred were ineffective. Even though a competent candidate may have been selected, the friction created by the efforts of opposing factions to fill the vacancy placed the new man under suspicion of political connections. To counter this, a system was devised whereby a statewide examination is held at a pre-announced time. Candidates who possess the necessary educational, physical, age, and interest requirements are screened, and their past records are investigated. Those who survive this screening process are given a four part examination conducted by Commission officials and personnel examiners at a central location in the state. Knowledge of wildlife and agriculture, general knowledge, mental aptitude, and physical condition are examined, and oral interviews by an impartial board of personnel experts are conducted. A pre-announced number of candidates is selected from the top scoring applicants, and given a thorough training course. A branch of the University of North Carolina, known as the Institute of Government, conducts the training program. The Commission furnishes the instructors and the majority of the material on research management and public relations, with technical work on legal matters being conducted by instructors who are graduate lawyers. This system of selection and pre-service training enables our state to prepare the best qualified applicants for field service. Political interference is of no effect under this system.

Upon completion of training, candidates are placed in a standby status awaiting assignment. When a vacancy occurs, a pre-trained protector is immediately placed, thus eliminating lapse of time between vacancy and appointment. No pre-service trainee is assigned to his county of residence until he has served in another county at least two years. This reserve of trained men also allows other divisions of the Commission to have trained personnel available for jobs of commensurate responsibility.

Our system of selection, training, and placement has reduced to a minimum the amount of unwholesome influence which can be exerted upon enforcement personnel, and gives the man every opportunity to make for himself a life-long career in wildlife protection work.

Training is a continuing process, with annual refresher courses being conducted for all employed protectors, and training sessions held at scheduled quarterly district meetings.

Field supervisor has aided in establishing strengthened personnel policy. Semi-annually, a merit rating is given each protector by his supervisor, based on twenty phases of the work. Adjustment of pay scales is based upon these ratings after they have been checked, discussed with the individual concerned, and weighed in connection with longevity and past records. The protector's knowledge of the performance expected of him is an incentive to increased efficiency, and discussion of the ratings with supervisors, enables them to improve on deficiencies. Public relations-education activity is given considerable weight on this rating, which tends to increase the protector's efforts toward attainment of law observance, rather than a high prosecution record.

Prompt replies and action are provided by the office staff in furnishing published material, movies, speakers, and aid in management programs—all of which build the protector's prestige within the community, and develop his pride in being able to produce results.

A force in uniform gains recognition. North Carolina provides uniforms to each officer, and has found that this adds to the respect given the position. Each protector is furnished signs which designate his residence or his offices.

Equipment is made standard, with cars, boats, and plane being maintained in appearance according to established plans. The mobility of the units and their uniformity and their effectiveness when used together, have caused many people to greatly exaggerate their number, and fear of apprehension accounts for much saving of our wildlife. Many persons believe there is a plane, several cars, and many officers in every county, and that chances of escaping detection by a force of this size are slim indeed.

Special programs have been utilized to emphasize proper observance of the laws. Deputy protectors are appointed upon past interest and present willingness to work without pay, and field activity is required for continued tenure. Strangely enough restriction on deputies has increased the interest in and the favorable results from this program.

The opening day of the general season is designated Wildlife Protection Day by the Commission. Each male employee, and every deputy protector, devotes his full day to enforcement activity, following an organized plan. A large majority of the hunters is checked, and the public awareness of enforcement is widespread. Other wildlife days are similarly designated, with protectors taking full part in Management and Education Days.

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1. H. Boardmore and D. Wanger of Harrisonburg prepare for the hunt next day.



2. Layton Payne (left) dishes out an early breakfast to the hunters before they head for deer country on opening day.



3. The light of dawn shines through the door as the group takes a last look around the cabin before departing.



4. The group of Rockingham hunters heading up the mountains in search of their stands for the day.



5. "We'll take our stands over yonder," says this hunter as he points out likely deer territory to his partner.



6. On stand, Layton Payne, owner of the "Gun Shop" in Harrisonburg, waits patiently for a buck to come along.



7. The reward for patience is shown, as the proud hunter looks over a nice four-point buck he killed.



8. The road back to camp is long, but cooperation among the hunters in sharing the burden makes it easier.



9. After checking the deer at a local checking station, as is required by law, the deer may be taken back to camp.



10. Back at camp, the job of skinning the buck is taken over by old hands.



11. A nice venison quarter is held by Layton Payne. All that remains now is proper aging, careful cooking, and some hardy appetites.

VIRGINIA DEER HUNT Mountain Style

Commission photos by Kesteloo

Deer hunting—mountain style, is a rugged business. Steep slopes and deep ravines must be traversed. If you are lucky enough to kill a buck, its a long hard pull out of the mountains.

Its rough and its tough, but its fun. It takes a good pair of legs to carry you along, let alone a deer, over the rugged terrain. But that's Virginia deer hunting—mountain style, and every mountain hunter loves it.



Our Cooperative National Forest Program

Photo by George Lohr Studios

Most significant wildlife accomplishment on the national forest areas in Virginia has been the return of the deer herds.

By A. R. COCHRAN

THE VIRGINIA COMMISSION of Game and Inland Fisheries has gained nationwide fame for its game management accomplishments in the Old Dominion. There is a reason for this. As we look about us on every side we see decadence in institutions and in governments. There is a reason for this also.

Why do we see life and growth here and old age and approaching death there? Let us look at the principles which give life and look at this work of wildlife management here in our beloved state. I am on familiar ground when I talk about the cooperative wildlife work on the two national forests in Virginia because it has been my privilege to be in that work since its inception thirteen years ago. A program must have its roots in the soil, and this program does, because those responsible for the program have a deep conviction that only as we understand nature and work with her are we able to succeed. Solomon made the observation which expresses this principle, that all the rivers flow into the sea and yet the sea is never full.

The noblest concept of nature is that of the balance in nature—the wheels that rotate within wheels. The rainfall or the hydrologic cycle is a

continuous recurrent series of events, as water is evaporated from the ocean coming down as rain, hail and snow and returning to the ocean as runoff from the land.

There is the life cycle beginning with soil, plants, animals and man, and back to the soil—a continuous cycle or wheel. Then the grandeur of nature as expressed in the seasons is cyclic. We are concerned with the balance in nature, all of us. As conservationists, we are committed to maintaining this balance in nature. It helps us to explain our work, to answer the questions of citizens and to meet criticisms, and what is more important, it gives us confidence in our work—a confidence that comes only to those who are deeply grounded in fundamental truths. You, a law enforcement officer, I, a forester, understand each other better when we realize that our job is really one. Our tasks and responsibilities may differ, but our aims and objectives are identical, as we think in terms of working with nature to maintain the balance.

Vision has given this program youth and vigor. No one's accomplishments exceed his vision. A vision of wide public service has inspired us to accomplishment and success. A vision of wildlife

management on a million and a half acres of public land is challenging. This land belongs to all the people and it is dedicated to the service of all the people. This should be kept in mind. I don't own a foot of it, but I own as much as you do and you own as much as I. It belongs to all of us. Because it belongs to all of us, it must be managed in a way that will bring the most benefits to the most of us. Because this is true, we must realize that the watersheds are the most important function of the national forest. Our greatest responsibility lies in seeing that this protective covering is guarded from fire, that it is not injured or damaged by any activity or use. Water is the most precious resource of a people: I wish I had space to write about water. Arthur Cahart, the conservationist and sportswriter, has written a book, *Water or Your Life*, that ought to be read by each one of us.

Then there is the timber resource—its management for the production of wood for the nation—that is an important part of our vision of greater service to the public.

Recreation—the tonic of the mountains and forests and streams—this is an important resource, hunting and fishing, of course, being of major importance in recreation.

The management of the wildlife resource and how it fits with watershed management is important to all of us when we consider multiple use concepts. Timber growing fits into producing food and cover for wildlife, and it too is a part of our vision.

Then our vision must take into account the development of these resources. Trees grow up and ma-

ture to give opportunities for wildlife management, better cover, more food. Wildlife reproduces and furnishes a harvest for the pleasure and profit of our people. A great deal of the success of the program comes from the fact that wildlife technicians, wardens, and rangers have a vision that includes our working together to make this great cooperative wildlife management plan the model of wildlife management for the nation. We need the greatest possible vision in this. Let us keep our vision broad. Let us not forget that it includes a partnership with the public in making it a success.

Aggressiveness is a factor. We have a program in which we believe and we are aggressively pushing it. We must continue to prosecute this program in a vigorous manner if it is to continue to succeed. We are enthusiastic about the program and enthusiasm is contagious. You don't get much out of a program unless the people responsible for it are genuinely interested. I am glad for this interest. It helps a lot. Our efforts and enthusiasm must be guided. There are a lot of people in your department and in my organization who have particular fields of responsibility. There are enough cooks to spoil the broth and would do so except for the fact that each individual knows his responsibilities, and he knows the responsibilities of the people with whom he works. This is to say that I must not only know my own job, but I must know what your job is, so that I can work intelligently with you to promote the entire job.

To guide us in carrying out the cooperative agree-

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Clean, wholesome recreation is a growing use in the two national forests within the boundaries of the Old Dominion, and it is growing fast.



Improving Conditions for Migratory

Waterfowl on TVA Impoundments

By A. H. WIEBE

WHEREVER and whenever waters are impounded for multipurpose use, fluctuations in level are unavoidable. Any secondary program associated with such impoundments must consider the effect of these variations in level. In a fish and wildlife program on multiple-use reservoirs, the "time of occurrence" of fluctuations is perhaps fully as significant as the extent of the drawdowns.

This paper explains how water-level fluctuations affect the abundance of ducks wintering in the Tennessee Valley, and suggests certain positive measures that may, to a significant extent, counteract the influence of wide fluctuations and seasonal recessions in water level. Since this region is not used extensively by ducks for nesting or summer feeding, we are concerned primarily with conditions that prevail during the winter.

The Tennessee River Valley is not on a major flyway, except for the lower several hundred miles which may be considered as an outer fringe of the Mississippi Flyway. Nevertheless, reasonably large numbers of ducks traverse the Valley during spring and autumn migrations, and many winter on the TVA impoundments. The number of birds now wintering on these impoundments, however, is far below the expectations of hunters and conservationists.

The writer believes that the number wintering in the impoundments is limited primarily by the annual winter drawdown for flood control. To some extent, the water is fluctuated for power and for malaria control but the variations in level for these purposes are of smaller magnitude than for flood control. Too, the fluctuations for power are less pronounced in winter than summer, and those for malaria control are restricted primarily to the mosquito breeding season.

Reasonably large numbers of ducks traverse the Valley during spring and autumn migrations, and many winter on the TVA impoundments.

Photo by Soil Conservation Service

The effect of drawdown on the abundance of ducks is indirect. It concerns the production and availability of food plants. Even at the height of the drawdown, the TVA impoundments provide several hundred thousand acres of open water, but available food is scarce.

Duck Food

The food upon which ducks depend and the absence or presence of which determines whether they will pass as migrants or remain as a resident winter population may be divided on the basis of habitats: (1) aquatics, submerged and emergent; (2) mudflat species; and (3) terrestrials, wild and cultivated. The growth or availability of aquatic and mudflat species is seriously affected by water-level fluctuations.

Submerged Aquatics

The growth of these plants depends on the ability of sunlight to penetrate the water. Turbidity therefore determines the depth to which submerged aquatics can grow. In most or all TVA impoundments, the depth of the zone of annual water-level fluctuation exceeds the penetration of sunlight adequate for growth of aquatics. In clear storage reservoirs the transparency may, at times, exceed 30





Commission photo by Kesteloo

While the Tennessee River Valley area is not a major flyway for ducks, the improved conditions for migratory waterfowl on TVA impoundments has resulted in greater concentrations of ducks and geese on the reservoirs each year.

feet, but the annual drawdown for flood control may be as much as 60 feet in some and more than 100 feet in others. Drawdown in main-stream reservoirs generally is less than 10 feet, but the transparency there is usually low; in such impoundments the turbidity may be attributed to a combination of factors: (1) many rough fishes in the extensive backwaters; (2) erosion of the watershed; and (3) rapid exchange of water volume, affording little time for silt to settle. In the mainstream reservoirs there are few areas, except as noted below, where the transparency would be as much as six or seven feet for any length of time; in many shallow backwaters the light penetration does not exceed one foot or even six inches. The lower sections of such reservoirs are less turbid but this is of no practical value in the production of duck foods because those sections generally have steep shorelines and no extensive areas of shoal water.

We may take for granted, therefore, that submerged aquatics will be sparse or absent in TVA impoundments because the depth of annual drawdown is greater than that of light penetration. Even if submerged aquatics were encouraged by constant water levels in summer, the plants would be "high and dry" in winter when levels are low for flood control.

Emergent Aquatics

What has been said about submerged plants applies with minor variations and exceptions to the emergent types. After once above the water surface, the latter are less dependent on the transparency of the water. They also will stand dewatering much better than submerged aquatics. Emergent

plants, however, may be destroyed when submerged by highly turbid floods.

Mudflat Plants

In many sections of the TVA impoundments some valuable duck food plants grow abundantly along the margins of the reservoirs, and invade the zone of water-level fluctuations. Provided the recession of the water is controlled, especially with respect to time, considerable quantities of duck food may be produced annually within the drawdown zone. The schedules of water-level management and shoreline conditioning for malaria control now in effect favor the development of mudflat food species as against useless woody plants. Much of the potential value of these plants as duck food, however, is lost because, when the birds arrive, the water margin is so far from the vegetated zone that the ducks will not cross the bare mudflats intervening to reach the food. Were it practical to raise the water during November and December and flood some of this marginal vegetation or reduce the distance between the water and the vegetation, the ducks would use these plants extensively. This is a good illustration of the distinction between abundance and availability. These mudflat plants are highly important; they occur in great abundance, they are extensively utilized by ducks if available, and their perpetuation along the reservoir margin above the water margin is assured by routine shoreline maintenance for malaria control.

Terrestrial Species

Several kinds of ducks will leave the water occasionally and wander inland to feed on terrestrial

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Virginia's Inland Fish Series

THE BLUEGILL BREAM



AMONG ANGLERS who pursue the sport of pan-fishing, the unanimous choice for both scrap and downright good eating is the bluegill bream. It shares its berth with none other of its kind and has earned the title of "Prince of Panfish."

Thriving in abundance all over the eastern part of the United States, the bluegill has recently been introduced into California lakes. It is easily confused with a number of other sunfish species because its colors vary from locality to locality according to water conditions. Generally, however, the back is dark olive-green, with a purplish luster. The belly often is a brilliant copper-red, while the cheeks are an iridescent greenish-blue. The fins are deep green and the gill covers a velvety black.

These fish are at home in the waters most suitable for the largemouth bass. The two are compatible to the extent that they can thrive together, but a great portion of Mr. Bigmouth's meal is made up of small bluegills. Were it not for the predacious habit of the largemouth, few bluegills would ever grow to large size. By keeping the bluegills thinned down, those that survive grow fast and large, as the competition for food becomes less and less critical.

Bluegills begin spawning when the waters warm up in the springtime here in Virginia and they con-

tinue to spawn until the waters cool off in the fall. The reproductive capacity of this fish is unbelievable. In West Virginia two pairs of adult bluegills were stocked in a farm pond in May or June and the pond was seined that fall. Thirteen thousand young bluegills were raised from the pond alive and unaccountable numbers of the eggs undoubtedly died. In reproducing so fast and so prolifically this fish would soon eat itself from house and home, were it not for the feeding habits of the largemouth bass that keeps the population under control.

The bluegill ranks first among fishes stocked in farm ponds. For a session of utmost fishing enjoyment, with delicious eating reward, no panfish sport surpasses that which can be had on a light fly rod in a well stocked farm pond. Bream school readily, strike vigorously, and feed often—a most inviting combination for angling sport. They ordinarily take surface or sunken lures with equal avidity. They average about three-quarters of a pound but go as high as one and one-half pounds.

We owe a great debt to "Mr. Bluegill," as we do to any fish still holding its own in Virginia waters. Perhaps this is why we still hold it with such great affection everywhere. Rare indeed is the lake or pond that cannot boast of a goodly population of bluegills.

Virginia's Game Bird Series

THE MALLARD DUCK



WITH NECKS OUT-STRETCHED, the favorite mallards wing their gallant way southward.

Through overcast skies, the V-shaped flocks—traveling at a mile a minute—streak like arrows to a target. The migration is on, and the gantlet of lurking hunters must be run before they can reach their southern homes. Here they will try to live out the winter in comparative warmth and safety. Spring will send them north again, but for now—they rest! Such is the life of the mallard.

This beautiful duck has much in its favor, ranking not only as the world's most famous and useful of waterfowl, but boasts of being the ancestor of today's domestic duck as well.

Wide distribution, large size, and excellent reputation as a table delicacy, have done much to hold it among the prominent ranks of game birds. Its rapid adaptation to changes in its environment wrought by man, its extreme wariness and development of nocturnal habits, besides its gorgeous hue, have done much to hoist its desirability above and beyond that of almost any other of our waterfowl.

The mallard is probably our most widely distributed wild duck, breeding in Asia, Europe, and the Arctic, as well as in the western and midwestern United States. Although commonly known throughout the country, the mallard is the predominant

inhabitant of the region west of the Appalachians.

Building its nest on the ground, the mallard makes good use of its own feathers and the vegetation surrounding it. Upon the completion of the nest, near a slough or marsh, the 8 to 12 pale greenish-blue eggs are incubated by the female for 26 days, at which time the young are hatched and scamper off into the water. Eight weeks after hatching these ducklings are capable of flight.

Mallards are destructive to the larvae of mosquitoes and are extremely effective in clearing stagnant pools of such insects where they breed. They are versatile in their diets and eat corn, wheat, and other grains from the land, as well as sedges, grasses, smartweeds, and pondweeds from the water.

In the past man has destroyed the environment of the wild mallard by draining marshes and lakes, burning marshes and watersheds, polluting the waters which it would ordinarily inhabit, and by working against it and all of its kind. Yet, despite all of our destructiveness, the mallard has somehow maintained its numbers comparatively well. Before it is too late, we should try to make amends. We cannot tempt fate too long before she grows weary and intolerant. It would be a great loss if the day came when winter brought to the south *nothing* but cold weather.

OUR COOPERATIVE NATIONAL FOREST PROGRAM

(Continued from page 17)

ment and the policies and objectives of this agreement, we have listed the duties and responsibilities of all of us, game warden, game manager, technician, and ranger, and placed it in our manual for our guidance. As I stated before, it is not only necessary to know our individual place in the organization but we must know what the other fellow is responsible for. We have a game manager's handbook to guide the game manager in his important duties and responsibilities.

Important to the success of this program has been the research and training and the study that has gone into it. Your school, where you study scientific game management and administration of the game laws, is an indication of the search for knowledge that is being made to make this a successful program. We need to have all the information we can get, to know all the facts that we possibly can and be guided accordingly. Sometimes the facts are so strange that they are not recognized. They are foreign to what we think the facts are. Sometimes our prejudice won't allow us to accept the facts. We must keep an open mind or else decadence will take over. We must extend the frontiers of our land management.

As servants of the public we have tried to keep the public informed as to the true situation. A great piece of work is being accomplished, but we must continue to ask ourselves if it is good enough. There can be no progressive forward looking game management program without public support to the measures. We cannot have public support until we are thoroughly sold on the measures required. Then all of us must work together to see that the policies and objectives are carried out and that the public knows what these are. The game manager, the warden, and the ranger must be very careful. They must be together and work together closely, if this is truly to be a cooperative program of wildlife management in this matter—this most important matter—of public relations. Your sincerity and honesty and singleness of purpose in the public service will continue to serve you well in the future in this field of public relations and public information.

We have come a long way since 1938. We still have a long way to go to achieve the ultimate in resource management, and I see no place anywhere along the line for relaxation of effort if we are to continue to succeed.

THE IMPORTANCE OF LAW ENFORCEMENT IN WILDLIFE CONSERVATION

(Continued from page 13)

Giving the protector a responsibility in the formulation of policies and regulations ties him closely to the rest of the staff. Each officer is consulted for any suggested change in the seasons and bag limits, and the recommendation of the protectors are often given after they have conducted public inquiry in their counties.

Conservation, according to Leopold, is but a state of harmony between man and nature. Enforcement's job in bringing about that harmony is a stone of many facets, but it is the foundation upon which the success of the program stands or falls. Trained personnel, seeking to instill a sense of "law observance" in the citizens of their communities, can make conservation of our wildlife resources a living, progressive force for the welfare and happiness of all our citizens, and the accomplishment of the aim of true conservationists—more sport for more people with equal opportunity for all to enjoy it.

WATERFOWL ON TVA IMPOUNDMENTS

(Continued from page 19)

plants. They frequently utilize acorns and will invade cornfields to feed on the mature grain, as also cereal crops that remain in the field during the duck season. After the birds become acquainted with the location of such cultivated crops, they will leave the water and fly directly to the feeding area at the appropriate time of day.

Corrective Measures

Available duck food is scarce in the fluctuating TVA reservoirs in winter because of the drawdown for flood control. The latter is a major objective in the TVA program and winter drawdown is inevitable; hence the impoundments will be no winter paradise for ducks. Several corrective measures can be beneficial to the waterfowl, by making food available.

Providing Terrestrial Plants

In some sections of the country ducks that leave the water to invade adjacent fields are responsible for serious crop damage. This may never be serious in the Tennessee Valley because few mature crops

remain in the fields by the time ducks arrive. The birds, however, will feed in green fields of autumn-planted cereals during the winter. Such terrestrial feeding suggests something that can be done for ducks to offset, to some extent, the adverse effect of water-level fluctuation. If agricultural crop lands are devoted to production of duck food, such lands must be properly located with respect to the water, and there is a limit to which crop lands can be used for this purpose, especially at the present time.

The U. S. Fish and Wildlife Service has indicated that leaving part of a domestic crop in the field to attract ducks does not constitute baiting so long as the crop is not manipulated in any way; hence any landowner adjacent to the reservoir might do something to encourage the ducks to remain. Organized sportsmen also may see a possibility to aid their favorite recreation.

Dewatering

Several backwater areas, chiefly in main-stream reservoirs, might be dewatered during the summer for more economical malaria control and also to benefit waterfowl management. Other areas, where the need in respect to malaria control is not indicated, might be dewatered during the summer for the benefit of wildlife alone. Useful plant species will grow and fruit in areas dewatered during the main portion of the mosquito breeding season, and these plants are utilized by the ducks during the autumn and winter, provided the areas are then flooded entirely or partly. It is important to control the water level behind dikes that separate these management areas from the main reservoir. Such dewatering projects can be used with maximum effect only when they can be drained or refilled independently or, in other words, when required. In many such potential areas this might require pumping, either into or out of the backwaters. Hence dewatering for the benefit of waterfowl is limited, at least until it can be determined what expenditures are justified for these migratory birds.

Two experimental dewatering projects on Wheeler Reservoir initiated jointly by TVA and the U. S. Fish and Wildlife Service were far advanced before the war and doubtless will be completed as soon as conditions permit. Plans for a third project on Wheeler Reservoir, partly within the refuge, were completed in 1942, but not executed.

A 68-acre pond adjacent to Chickamauga Reservoir (Tennessee) has been made available to the TVA Biological Readjustment Division for the benefit of migratory waterfowl. The pond can be filled and drained by gravity independently of the

reservoir, and ducks already have shown a preference for the area.

In Blackwell Swamp, one of the two partly completed dewatering areas, water levels were manipulated somewhat in the winter of 1943-44. The ducks concentrated in Blackwell Swamp where there was less food than in some other localities. The food was made available to the birds by flooding some vegetation which had grown on land while the latter was partially dewatered. This again suggests the importance of availability as distinguished from abundance.

Use of dewatering projects offers an opportunity to do something constructive and practical for migratory waterfowl and should be considered as part of the post-war wildlife program.

Constant-Level Pools

Pools of relatively constant level, if under complete control and strategically located, are another means to improve waterfowl habitat. These have the additional advantage of providing a stable habitat for muskrats. To be really effective, the water supply should be under control, at least as to volume and transparency. Large amounts of turbid flood waters should be kept out. The exclusion of rough fish species is of primary importance; they may destroy existing vegetation and if present in large numbers may make the water so turbid that submerged aquatics cannot thrive. The control of useless and obnoxious plant species is another problem that cannot be ignored, especially in southern waters where some such pests are common—lotus is an example.

Constant-level pools with heavy growths of aquatic plants, especially emergent species, afford excellent breeding places for malaria mosquitoes. For this reason, such ponds should be at least one mile from human dwellings occupied at night; otherwise the water levels should be managed on a schedule favorable for malaria control. The 68-acre pond mentioned above could also be used as a constant-level pool, but will be more useful as a dewatering project, because of both the malaria control aspect and the presence of rough fish in the inlet.

Water-level fluctuation in a managed area (e.g., TVA), especially the drawdown for flood control, imposes serious limitation upon a program for management of migratory waterfowl, notably in winter. Limited developments for ducks are possible through the use of some agricultural crops as duck food, summertime dewatering, and maintenance of constant-level pools.

1. Reprinted from the *Journal of Wildlife Management*, Vol. 10, No. 1, January, 1946.



VAFTA Field Trials Held

L. L. Pratt and Jimmy Sloan, both of Roanoke, won a sizable chunk of silver in absentia as the thirty-second fall trials of the Virginia Amateur Field Trials Association began at Hawfield Game Sanctuary near Orange in November.

The Roanoke men are co-owners of Spunky Village Sport, the white and liver pointer which won the Derby Stakes over a field of 24. When Pratt and Sloan failed to fly in according to plan, Trainer Hunter Grove, from North Carolina, handled Spunky to a victory. Second place went to The Haberdasher, owned by Clarence H. Edwards, of Chatham, while Briardale Allegro, owned by Anthony Imbesi, of Bedminster, Pa., took third.

In the all age group, Quadive, owned by E. J. Newman, from Sumter, S. C., won first; Allen Wahoo Rex, owned by Sandy Hill from Charlottesville, took second; and Tip Top Sam, owned by W. G. Chaney of Sumter, S. C., took third.

Black as a Crow

"Black as a crow," doesn't always apply, as is evidenced by the mounted brown crow submitted to the Commission by W. H. Phipps, of Roxbury, Virginia.

This oddity was killed in New Kent County and mounted by, Charles Jordan, of Randy's Sporting Goods store of Richmond.

The bird had been seen on numerous occasions before its luck ran out.

W. H. Phipps of Roxbury, Virginia, is shown holding the brown crow he killed on his farm.

Commission photo by Shomon



Merck Rod and Gun Club Holds Annual Meeting

At the annual dinner meeting of the Merck Rod and Gun Club, sportsmen of Rockingham County met at Elkton with top officials of the Virginia Commission of Game and Inland Fisheries and the George Washington National Forest last November at a pre-hunting season to review conservation activities in the Valley area.

The meeting, jointly sponsored by the Merck Rod and Gun Club and the Rockingham County Game and Fish Association, was the second annual affair of its kind held at The Gables in Elkton. Ed Shults, president of the Merck Rod and Gun Club, served as general chairman and toastmaster.

Principal speaker at the dinner was executive director I. T. Quinn of the Commission, who was introduced by E. M. Karger, supervisor of the George Washington National Forest.

Mr. Quinn outlined the Commission's long-range wildlife restoration program and emphasized the importance of its wildlife work on Virginia's two national forests.

"The cooperative program carries a budget of more than \$130,000 for the current fiscal year," said Mr. Quinn, "and real progress is being made in the long-range effort to develop the one and a half million acres of national forest land in the state as a productive public hunting area."

Supervisor Karger spoke on the importance of forest fire prevention and safety in the overall program to "produce timber and wildlife as related crops."

Thomas G. Herring, Harrisonburg member of the Commission, won loud acclaim from the group for his brief address on the theme of "good sportsmanship." He emphasized the important "social and moral values that are linked with hunting, fishing and love for the out-of-doors."

Other speakers included Ted Fearnaw, of the U. S. Forest Service Regional Office at Philadelphia, Mr. Fearnaw, is in charge of wildlife management for the northeastern region of the service.

Peter J. Hanlon, in charge of wildlife and timber management on the George Washington National Forest, spoke on the importance of acquiring "small tracts of land needed to block out national forest holdings." He pointed out that these small areas



Photo by Randolph M. Robinson

(Left to right) Elmer Richards, game technician, Ed Shults, president, Merck Rod and Gun Club, I. T. Quinn, Commission's executive director, Thomas Herring, commissioner, E. M. Karger, supervisor of the George Washington National Forest, Ted Fearnnow, U. S. regional forester from Philadelphia, and Peter J. Hanlon of the George Washington National Forest shown at the Merck Rod and Gun Club's annual dinner.

of private land within the forest cause confusion from the standpoint of public use and law enforcement.

Law Enforcement Gets Radios

M. Wheeler Kesterson, chief of the Commission's law enforcement division, reports that his division will now be better able to cope with game violators in the future, due to the recent distribution of 40 "walkie talkies" to his conservation officers.

At a recent meeting, in the office of the Commission, W. C. Nickerson, from Motorola, Inc., Chicago, Illinois, instructed the five warden supervisors on the use and mechanism of the "walkie talkie."

Each of the five warden supervisors was issued eight instruments to be used in his individual district by the Commission's conservation officers (flying squadron).

M. Wheeler Kesterson (left) and game warden Julian Hill (right) are shown testing the new law enforcement division's new "walkie talkie."

Commission photo by Merritt



JANUARY, 1952

Cooperation Pays Off

This account of how a game violator was stalked, apprehended, and brought to justice through the co-operation of two governmental agencies and one witness was submitted to Webb Midyette, supervising warden from Ashland, by T. J. Starrett, conservation officer, who in turn submitted it to us.

Starrett received a complaint to the effect that some one was dynamiting fish in Bobb Run, Frederick County. Upon investigating the report with Luther Hart, he found wrappings from dynamite at the scene.

The evidence was sent to the F. B. I. laboratory in Washington, D. C. After two months of meticulous inquiry and research, the F. B. I. identified the wrappings as dynamite wrappers manufactured by the DuPont Corporation 15 to 20 years ago, and the only information they had was the words "6 ft." This indicated to the DuPont scientists that the wrappings came from a "6 feet electric blasting cap."

A suspect, who had been seen running from the scene of the dynamiting, was questioned by Starrett but he denied having been at the location on the date reported. Further questioning confused the suspect and he admitted being at two places at the same time.

It was brought out in the trial that the suspect had given false testimony and, furthermore, that he had worked for the State Highway Department some years ago, at which time he had access to the dynamite used in the violation.

By research, witnesses, questioning, and above all, the cooperative spirit shown between the F. B. I., the game wardens, and the witnesses, a conviction was made and Elmer Newcome of Frederick County was fined \$200 and given a 30 day jail sentence.

Conservation officer T. J. Starrett and warden Earl Cather are to be commended for their diligence, along with Luther Hart, whose eye witness account made the conviction possible.

JANUARY AUTHORS

G. A. JONES., *The Importance of Enforcement in Wildlife Conservation*, is chief, law enforcement division, North Carolina Wildlife Resources Commission.

LESLIE R. HARPER, *Save that Head!*, is a wildlife conservationist of Waynesboro, Virginia.

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A. R. COCHRAN, *Our Cooperative National Forest Program*, is supervisor of Jefferson National Forest, Roanoke, Virginia.

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for
Students

Teachers

Parents

Wildlife Ramblings

Have you been out in the fields lately to see what animals are in your backyard? It is quite easy to tell what visitors you have had if there has been a light snow or heavy rain. All animals leave their trade marks which relate many interesting stories about their owners.

Each animal has a distinct track and also a distinct trail. When it runs, its feet are far apart and when it is in no hurry, its trail is altogether different. These stories and many more can be read by the observer in the field. However, it will be necessary to become acquainted with a large variety of tracks and trail patterns.

After you can distinguish the various tracks, your fun has just started. Then you are ready to make permanent records in the form of plaster casts. You can make your own plaster casts of animal tracks. First you must have some plaster of paris and water, which can be mixed in any container. An empty tin can is adequate. Always sift the plaster into the water and stir until the mixture resembles thick molasses, then pour immediately into the imprint you have selected. This operation should be done quickly because the plaster of paris is quick to harden.

After the cast is dry and hard, clean off the mud or snow by washing. You now have a reverse track on one side of the cast. For future reference, be sure to label each cast right away. After the cleaning is finished, it is best to paint the cast various colors to emphasize the imprint. Water paint is preferable and a final coat of clear shellac will make the colors permanent.

If you are interested in having your cast look exactly like the original, then it will be necessary to do some additional work. Cover the face of your first cast with a thin even layer of vaseline. Then place a piece of heavy cardboard or metal tightly around the cast to prevent leakage. The height will depend on how thick you desire your second cast. Now you are ready to pour in the freshly mixed plaster as you did before. Let it harden, remove the sides, and with a knife gently pry the two sections apart. If they fail to part easily it is a sign you haven't used enough vaseline. As before, you wash the new cast and paint as desired. If you do not have perfect results the first time, recheck your work with care in order to correct your mistakes.



*"What a memory you've got!
Where do you think the nuts
are stored?"*

These casts may be used as wall plaques, or on bulletin boards in a display of tracks of your four-footed neighbors.

BIRD OF MONTH

The Slate-Colored Junco

"Leaden skies above, snow below," in size between a song sparrow and a chipping sparrow; with white outer tail feathers, conspicuous in flight.

"Ah," you say, "that is the snowbird." Yes, but the books call him the slate-colored junco.

Well may they be called snowbirds. They flit in around the middle of October, forever like a cloud of falling leaves. All over the fields they spread, eating enormous quantities of grasses and weeds. (Another cause for thanksgiving, farmers.) When snow covers the ground they climb a little higher on the weed stalks; or they may flock to some kindly feeding tray.

From the numbers of them you may think all the juncos are right around your own field, your feeding box. But you are wrong; they are all over the eastern United States. Toward the latter part of April they are gone. Gone to their nesting grounds, from northern New York west and east, and north to the barren lands of upper Canada. But before they leave us these little "smacking," chirping birds have burst into song, a song you may confuse with that of the chipping sparrow or the Myrtle warbler.

In the United States we have sixteen species of juncos. Virginia has but two. Up in the mountains is the Carolina junco. This bird nests in these mountains, in winter engaging in altitudinal migration. And what do we mean by altitudinal migration? Simply this: that in warm weather they are high up in the mountains; in cold weather they are down in the warmer valleys. But at that they have been found in zero weather on snow-covered ground on the top of Mount Mitchell, the highest peak east of the Rocky Mountains.



Photo Courtesy Times Dispatch

Peter J. Hanlon, president of the Harrisonburg chapter of the Izaak Walton League of America (left) congratulates C. S. McCormick, of Hinton, who won the deer trophy contest for west of the Blue Ridge.



Photo Courtesy Times Dispatch

Three year old Scott McCormick seems duly impressed by the prize winning bear head for the west of the Blue Ridge, shot by Herman Ritchie from Linville. The bear was shot in Rockingham County.



Commission photo by Shomon

Winners in the east of the Blue Ridge deer contest, held at Newport News, were (left to right) Marvin J. Stiel, 1st place, Donald A. Sowers, 2nd and 3rd (absent) places, C. M. Warre, 4th place, and J. M. Mundon, 5th place.



Commission photo by Shomon

Winners in the east of the Blue Ridge bear contest were (left to right): W. N. Haldeman, 1st place; B. E. Norvell, 2nd place; W. R. Harris, 3rd place.

Winners of Statewide Big Game Trophy Contest

Climaxing the regional Big Game Trophy Contest held at Harrisonburg for the deer and bear trophies killed west of the Blue Ridge and the one held at Newport News for those killed east of the Blue Ridge, the Statewide Big Game Trophy Contest took place on November 3 in the office of the Commission of Game and Inland Fisheries at Richmond where statewide winners were selected.

The Statewide Big Game Trophy Contest is an annual event sponsored by the Virginia Commission of Game and Inland Fisheries as a climax to the two regional contests held at Harrisonburg for trophies killed west of the Blue Ridge and at Newport News for trophies killed east of the Blue Ridge. The eastern regional sponsor is the Virginia Peninsula Sportsmen's Association and the western division sponsor is the Harrisonburg Chapter of the Izaak Walton League of America. The contests were to determine the best deer and bear specimens taken during the 1950-51 season.



Commission photo by Kesteloo

George Johnson, one of the judges, (left) is shown presenting C. S. McCormick from Staunton, Virginia, a sterling silver bowl for his 17-point deer trophy, which he killed in Highland County. Chester Phelps (right), chief of the game division, presents Herman Ritchie from Linville, Virginia, a sterling bowl for his prize winning bear trophy.

Teachers!

Ends February 28, 1952

Students!

YOU STILL HAVE TIME

TO ENTER THE

FIFTH ANNUAL
\$1000.00

WILDLIFE ESSAY CONTEST

TEACHERS: *Enter your school now! Write for free reference material!*

Eight grand prizes, \$50 each, one for each grade, totaling
Eight second prizes, \$25 each, one for each grade, totaling
Eight third prizes, \$15 each, one for each grade, totaling
Sixteen honorable mention prizes, \$10 each, two for each grade, totaling
Sixteen special mention prizes, \$5 each, two for each grade, totaling
One school prize, best response

Grand total **\$1000**

There will be seven prizes in each of the eight competing grades. Grand prize winners will come to Richmond as guests of the sponsors to receive their awards. Others will be given awards in the schools. The school having the best response will be given a special \$40 prize for its athletic or general purpose fund.

200 certificates of merit will be awarded in addition to the money grand prizes.

SCHOOLS ELIGIBLE: Only Virginia schools, elementary and high, grades 5-12 inclusive will be eligible to enter this contest.

SUBJECT: **The Importance of Wildlife Conservation and Related Resources.**

WRITE Wildlife Essay Contest Headquarters, Box 1642, Richmond 13, Virginia for reference material. We will rush you such material as we have and will include a list of other possible sources.

CONTEST RULES

1. Essays must be submitted through the schools participating and each essay must contain a minimum of 500 words.
2. Each entry should bear the following information in the upper right-hand corner of each essay: name, sex, age, grade, address, school, county, and teacher.
3. Students of Virginia schools, grades 5-12 inclusive, will be eligible to enter this contest.
4. ALL essays MUST be mailed first class, PREPAID to ESSAY CONTEST HEADQUARTERS, Box 1642, Richmond, Virginia. Teachers must submit ALL entries, however they may make their selection of the best essays and indicate their choices.
5. No papers will be returned and the decision of the judges will be final. Each sponsoring organization will appoint two conservationists to serve on the judging committee.
6. Previous grand prize winners will not be eligible for top awards.